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EXAMINER

PARTHASARATHY, PRAMILA

ART UNIT	PAPER NUMBER
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2136

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/615,898	Applicant(s) GRAB ET AL.	
	Examiner Pramila Parthasarathy	Art Unit 2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/23/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the communication 03/23/2006. Claims 1 – 31 were received for consideration. No preliminary amendments to the claims were filed. Claims 1 – 31 are currently pending.

Priority

2. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

Information Disclosure Statement

3. An initialed and dated copy of Applicant's IDS form 1449 is attached to the Office action.

Drawings

4. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because See (1). The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the (1) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

(1) Specification discloses a step 805 a protected video stream previously generated (See paragraph [0048]). However, step 805 is shown in figure 8 as 806. Examiner suggests replace 806 in figure 8 with 805.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

5. Claim 28 is objected to because of the following informalities: Preamble recites, "An decrypting digital video decoder comprising:". Replace "An decrypting" with "A decrypting". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 – 3, 5 – 13 and 21 – 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Nardone et al. (U.S. Patent Number 5,805,700).
7. As per Claim 1, "receiving an input stream of compressed video content containing a sequence of frames; creating a set of encrypted frames by encrypting at least selected portions of selected frames of said sequence of frames in accordance with a frame encryption function; generating frame decryption information necessary to decrypt said set of encrypted frames; and assembling said protected stream using at least said set of encrypted frames and said frame decryption information", Nardone

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teaches an encrypting module receiving (unencrypted) stream of compressed video data as input (Column 4 lines 14 – 20); dynamically adjusting encrypting policy (creating a set of encrypted frames) and creating a set of encrypted frames (Basic Transfer Units) (Column 4 lines 18 – 54); outputs the corresponding portion of CVD+ (generating frame decryption information) and stores working copy of CVD, CVD+ and copy of formatter/encryption/selector module (assembling protected stream (Column 4 lines 42 – 54 and Column 5 lines 1 – 9).

8. As per Claim 21, “a video processing unit for generating a plurality of input data streams in response to a sequence of uncompressed video frames; an entropy compression unit for creating, based upon said plurality of input data streams, compressed video content containing a sequence of compressed frames; and a video encryption module configured to transform said sequence of compressed frames into a protected video stream containing at least a set of encrypted frames and frame decryption information necessary to decrypt said set of encrypted frames”, Nardone teaches a video processing unit generating and compressing video images (Column 2 lines 56 – 65) and receiving (unencrypted) stream of compressed video data as input (Column 4 lines 14 – 20); dynamically adjusting encrypting policy (creating a set of encrypted frames) and creating protected video stream containing a set of encrypted frames (Basic Transfer Units) (Column 4 lines 18 – 54); outputs the corresponding portion of CVD+ (generating frame decryption information) and stores working copy of CVD, CVD+ and copy of formatter/encryption/selector module assembling protected

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stream (configuring sequence of compressed frames into a protected video stream)(Column 4 lines 42 – 54 and Column 5 lines 1 – 9).

9. Claim 2 is rejected as applied about in rejecting Claim 1. Furthermore, Nardone discloses wherein said assembling further includes using unencrypted frames of said sequence of frames, said frame decryption information being synchronized with said set of encrypted frames (Column 5 lines 5 – 13).

10. Claim 7 is rejected as applied about in rejecting Claim 1. Furthermore, Nardone discloses encrypting a first consecutive number of said selected frames using a first frame encryption key and encrypting a second consecutive number of said selected frames using a second frame encryption key (Column 4 lines 15 – 41), Nardone teaches dynamic encryption policy with multiple alternatives.

11. Claim 8 is rejected as applied about in rejecting Claim 1. Furthermore, Nardone discloses assembling includes synchronizing said frame decryption information with said set of encrypted frames (Column 5 lines 5 – 13).

12. Claim 13 is rejected as applied about in rejecting Claim 1. Furthermore, Nardone discloses determining a number of bytes to be encrypted within each of said selected frames based upon a level of available processing power and a desired degradation of visual quality (Column 3 lines 44 – 64).

13. Claim 22 is rejected as applied about in rejecting Claim 21. Furthermore, Nardone discloses protected video stream is comprised of an encrypted video stream including said set of encrypted frames and unencrypted ones of said compressed frames, said frame decryption information being synchronized with said encrypted video stream (Column 5 lines 5 – 13).

14. Claim 25 is rejected as applied about in rejecting Claim 21. Furthermore, Nardone discloses video encryption module is operative to parse said sequence of frames in order to determine frame boundaries and frame types associated with individual frames of said sequence of frames (Column 3 lines 19 – 26).

15. Claim 3 is rejected as applied about in rejecting Claim 2. Furthermore, Nardone discloses wherein said frame decryption information includes encryption status information corresponding to each frame of said protected stream (Column 4 lines 42 – 48).

16. Claim 5 is rejected as applied about in rejecting Claim 2. Furthermore, Nardone discloses frame decryption information includes intra-frame encryption offset information corresponding to each encrypted frame of said protected stream (Column 3 lines 19 – 25).

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17. Claim 6 is rejected as applied about in rejecting Claim 2. Furthermore, Nardone discloses frame decryption information includes information identifying a data field size to be decrypted with respect to each encrypted frame of said protected stream (Column 3 lines 1 – 28).

18. Claim 23 is rejected as applied about in rejecting Claim 22. Furthermore, Nardone discloses frame decryption information includes encryption status information corresponding to each frame of said encrypted video stream (Column 4 lines 18 – 29).

19. Claim 24 is rejected as applied about in rejecting Claim 22. Furthermore, Nardone discloses frame decryption information includes decryption key information, intra-frame encryption offset information, and data field size decryption information corresponding to each frame of said encrypted video stream (Column 3 lines 1 – 28).

20. Claim 26 is rejected as applied about in rejecting Claim 25. Furthermore, Nardone discloses video encryption module is operative to maintain counts corresponding to each of said frame types, said counts and said boundaries being used to determine intra-frame encryption offset information (Column 3 lines 19 – 26).

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21. Claim 27 is rejected as applied about in rejecting Claim 25. Furthermore, Nardone discloses video encryption module is operative to maintain counts corresponding to each of said frame types, said counts being used to determine when to create new encryption keys used in generating ones of said encrypted frames (Column 3 lines 19 – 26 and Column 4 lines 24 – 29).

22. Claim 9 is rejected as applied about in rejecting Claim 5. Furthermore, Nardone discloses parsing said input stream in order to determine frame boundaries and frame types associated with frames of said sequence of frames (Column 3 lines 19 – 26).

23. Claim 10 is rejected as applied about in rejecting Claim 9. Furthermore, Nardone discloses including maintaining counts corresponding to each of said frame types, said counts and said boundaries being used to determine said intra-frame encryption offset information (Column 3 lines 19 – 26).

24. Claim 11 is rejected as applied about in rejecting Claim 9. Furthermore, Nardone discloses counts corresponding to each of said frame types, said counts being used to determine when to generate new encryption keys used in said of encrypting of said selected frames (Column 3 lines 19 – 26 and Column 4 lines 24 – 29).

25. Claim 12 is rejected as applied about in rejecting Claim 10. Furthermore, Nardone discloses parsing further includes determining sizes of said frames of said sequence of frames, said sizes also being used in determining said intra-frame offset information (Column 3 lines 1 – 43).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. Claims 4, 14 – 20 and 28 – 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nardone et al. (U.S. Patent Number 5,805,700) in view of Fetkovich et al. (U.S. Patent Number 7,151,832).

27. As per Claim 14, "receiving an input stream of compressed video content containing encrypted frames and unencrypted frames; receiving frame decryption information necessary to decrypt said encrypted frames, said frame decryption information distinguishing said encrypted frames from said unencrypted frames; and decrypting said encrypted frames in accordance with said frame decryption information", Nardone discloses receiving an input stream of compressed video content (Nardone input device 110); receiving frame the with corresponding portion of CVD+ (frame

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decryption information, encrypted frames and unencrypted frames) (Nardone Column 4 line 59 – Column 5 line 13). Nardone further disclose that partially encrypted CVD+ require fewer processor cycles. Nardone explicitly does not disclose decrypting encrypted frames in accordance with frame decryption information. However, Fetkovich discloses dynamic decryption of stream of data wherein decrypting the dynamically varied encrypted stream of data (that may comprise MPEG compressed video). Fetkovich discloses forwarding encrypted stream to a decryption unit wherein, recognizing encrypted frames (containing encryption key, key update unit, and other encryption parameter) and using the encryption information, providing an unencrypted MPEG stream (Fetkovich Column 7 line 2 – 21).

28. Motivation to combine the invention of Nardone with Fetkovich's teachings comes from the need for decrypting encrypted frames to provide unencrypted stream at the receiver end. Nardone et al. themselves provide a discussion of the need for decryption and efficiency of decrypting partially encrypted frames (with reference to total encryption approach) but are silent as to the specific details of the technical decryption process involved, see Nardone Column 3 line 58 – Column 4 line 13. It would have been obvious to one of ordinary skill in the art to combine Nardone with Fetkovich because decrypting protected video stream is needed for viewing high quality video stream but preventing unauthorized copying by encrypting the compressed video stream of Nardone and Fetkovich provides some details of how to prevent unauthorized copying by encrypting the video image and decrypting encrypted video stream using the

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encryption information received along with the details of decryption process. Fetkovich could have been modified by Nardone because Nardone provides encrypting compressed video data, including encryption information along with unencrypted compressed video data and Fetkovich discloses decrypting encrypted video data.

29. As per Claim 28, "a video decryption module configured to receive a protected input stream of compressed video content containing at least a set of encrypted frames and frame decryption information, said frame decryption information being necessary for decrypting said set of encrypted frames so as to form a set of decrypted frames; an entropy decompression unit for creating, based at least in part upon said set of decrypted frames, a plurality of video data streams; and a video processing unit for generating an output stream of uncompressed video content in response to said plurality of video data streams", Nardone discloses a video decryption module receiving an input stream of compressed video content (Nardone input device 110); receiving frame the with corresponding portion of CVD+ (frame decryption information, encrypted frames and unencrypted frames) (Nardone Column 4 line59 – Column 5 line 13). Nardone further disclose that partially encrypted CVD+ require fewer processor cycles. Nardone explicitly does not disclose decrypting encrypted frames in accordance with frame decryption information. However, Fetkovich discloses dynamic decryption of stream of data wherein decrypting the dynamically varied encrypted stream of data (that may comprise MPEG compressed video). Fetkovich discloses forwarding encrypted stream to a decryption unit wherein, recognizing encrypted frames (containing

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encryption key, key update unit, and other encryption parameter) and using the encryption information, providing an unencrypted MPEG stream (Fetkovich Column 7 line 2 – 21).

30. Motivation to combine the invention of Nardone with Fetkovich's teachings comes from the need for decrypting encrypted frames to provide unencrypted stream at the receiver end. Nardone et al. themselves provide a discussion of the need for decryption and efficiency of decrypting partially encrypted frames (with reference to total encryption approach) but are silent as to the specific details of the technical decryption process involved, see Nardone Column 3 line 58 – Column 4 line 13. It would have been obvious to one of ordinary skill in the art to combine Nardone with Fetkovich because decrypting protected video stream is needed for viewing high quality video stream but preventing unauthorized copying by encrypting the compressed video stream of Nardone and Fetkovich provides some details of how to prevent unauthorized copying by encrypting the video image and decrypting encrypted video stream using the encryption information received along with the details of decryption process. Fetkovich could have been modified by Nardone because Nardone provides encrypting compressed video data, including encryption information along with unencrypted compressed video data and Fetkovich discloses decrypting encrypted video data.

31. Claim 4 is rejected as applied about in rejecting Claim 2. Furthermore, Nardone discloses wherein said frame decryption information includes information corresponding to encrypted frames within said protected stream, (Nardone Column 5 lines 5 – 13). Nardone explicitly does not disclose frame decryption information includes decryption key information corresponding to encrypted frames within said protected stream. However, Fetkovich discloses encrypted frames (containing encryption key, key update unit, and other encryption parameter) and the decryption key (Fetkovich Column 7 line 2 – 21 and lines 35 – 46).

32. Motivation to combine the invention of Nardone with Fetkovich's teachings comes from the need for decrypting encrypted frames to provide unencrypted stream at the receiver end using the decryption information and a decryption key. Nardone et al. themselves provide a discussion of the need for decryption and efficiency of decrypting partially encrypted frames (with reference to total encryption approach) but are silent as to the specific details of the technical decryption process involved and providing a corresponding or specific decryption key, see Nardone Column 3 line 58 – Column 4 line 13. It would have been obvious to one of ordinary skill in the art to combine Nardone with Fetkovich because decrypting protected video stream is needed for viewing high quality video stream but preventing unauthorized copying by encrypting the compressed video stream of Nardone and Fetkovich provides some details of how to prevent unauthorized copying by encrypting the video image and decrypting encrypted video stream using the encryption information received along with the details of

decryption key and decryption process. Fetkovich could have been modified by Nardone because Nardone provides encrypting compressed video data, including encryption information along with unencrypted compressed video data and Fetkovich discloses decrypting encrypted video data with the decryption key.

33. Claim 15 is rejected as applied about in rejecting Claim 14. Furthermore, Nardone and Fetkovich in combination disclose wherein said input stream and said frame decryption information collectively comprise a protected video stream, said frame decryption information being synchronized with said encrypted frames within said input stream (Nardone Column 5 lines 5 – 13 and Fetkovich Column 7 lines 35 – 46).

34. Claim 16 is rejected as applied about in rejecting Claim 14. Furthermore, Nardone discloses wherein said frame decryption information includes encryption status information corresponding to each of said encrypted frames (Nardone Column 4 lines 18 – 29).

35. Claim 17 is rejected as applied about in rejecting Claim 14. Furthermore, Fetkovich discloses wherein said frame decryption information includes decryption key information corresponding to each of said encrypted frames (Fetkovich Column 7 line 2 – 21 and lines 35 – 46).

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36. Claim 18 is rejected as applied about in rejecting Claim 14. Furthermore, Nardone discloses wherein said frame decryption information includes intra-frame encryption offset information corresponding to each of said encrypted frames (Nardone Column 3 lines 19 – 25).

37. Claim 19 is rejected as applied about in rejecting Claim 14. Furthermore, Nardone discloses wherein said frame decryption information includes size information identifying a data field size to be decrypted with respect to each of said encrypted frames (Nardone Column 3 lines 1 – 28).

38. Claim 20 is rejected as applied about in rejecting Claim 14. Furthermore, Fetkovich discloses wherein said decrypting includes decrypting a first consecutive number of said encrypted frames using a first frame decryption key and decrypting a second consecutive number of said encrypted frames using a second frame decryption key (Fetkovich Column 7 line 2 – 21 and lines 35 – 46).

39. Claim 29 is rejected as applied about in rejecting Claim 14. Furthermore, Nardone and Fetkovich in combination disclose wherein said protected input stream is comprised of an encrypted video stream including said set of encrypted frames and unencrypted frames, said frame decryption information being synchronized with said encrypted video stream (Nardone Column 5 lines 5 – 13 and Fetkovich Column 7 lines 35 – 46).

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40. Claim 30 is rejected as applied about in rejecting Claim 14. Furthermore, Nardone discloses wherein said frame decryption information includes encryption status information corresponding to each frame of said encrypted video stream (Column 4 lines 18 – 29).

41. Claim 31 is rejected as applied about in rejecting Claim 14. Furthermore, Nardone and Fetkovich in combination disclose wherein said frame decryption information includes decryption key information, intra-frame encryption offset information, and data field size decryption information corresponding to each frame of said encrypted video stream (Nardone Column 3 lines 1 – 28).

Conclusion

42. Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

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43. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO Form 892.

Applicant is urged to consider the references. However, the references should be evaluated by what they suggest to one versed in the art, rather than by their specific disclosure. If applicants are aware of any better prior art than those are cited, they are required to bring the prior art to the attention of the examiner.

44. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pramila Parthasarathy whose telephone number is 571-272-3866. The examiner can normally be reached on 8:00a.m. To 5:00p.m.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-232-4195. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR only. For more information about the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

12/28/2006
Pramila Parthasarathy

December 28, 2006.